

CLAIMS

- [c1] 1. A voice over Internet (VOIP) system, comprising:
plural access points communicating with plural wireless communication devices
using a wireless communication device over-the-air protocol different from Internet protocol
(IP),
each wireless communication device transmitting frames of information,
at least a first access point undertaking selection functionality including frame selection and handoff
control.
- Ans* [c2] 2. The system of Claim 1, wherein the selection functionality is undertaken for
at least a first communication device, and at least a second access point assumes frame
selection for the first communication device when a predetermined threshold is reached.
- [c3] 3. The system of Claim 2, wherein the wireless communication device protocol
is a code division multiple access (CDMA) protocol, and each first and second access point
is a respective first and second CDMA access point (CAP).
- [c4] 4. The system of Claim 2, wherein the access point is a base station (BTS).
- [c5] 5. The system of Claim 2, wherein the infrastructure does not include a base
station controller (BSC) external to any access point and communicating therewith.
- [c6] 6. The system of Claim 2, comprising a selector entity in communication with
the CAPs.
- [c7] 7. The system of Claim 6, wherein the selector entity receives first
communication device frames from the first CAP when a first threshold is reached, the
selector entity monitoring frame selection by the first CAP for the first communication
device.

[c8] 8. The system of Claim 7, wherein the selector entity assumes frame selection for the first communication device when a second threshold is reached, the second CAP proposing frame selections for the first communication device and forwarding the frame selections to the selector entity for monitoring thereby.

[c9] 9. The system of Claim 8, wherein the selector entity determines whether frame selections from the second CAP are within a predetermined correctness threshold, and if so, causing the second CAP to assume frame selection for the first communication device.

[c10] 10. A method for frame selection in a wireless communication device infrastructure, comprising:

establishing communication between at least a first base station (BTS) and at least one wireless communication device using a non-Internet protocol (IP) over-the-air (OTA) protocol, the first base station being one of a plurality of base stations in an infrastructure;

selecting frames from the wireless communication device at the first base station (BTS); then

selecting frames from the wireless communication device at a second base station (BTS).

[c11] 11. The method of Claim 10, further comprising:
receiving first communication device frames from the first BTS at a selector entity when a first threshold is reached.

[c12] 12. The method of Claim 11, further comprising:
monitoring frame selection by the first BTS for the first communication device at the selector entity.

[c13] 13. The method of Claim 12, further comprising:
assuming frame selection for the first communication device at the selector entity when a second threshold is reached.

[c14] 14. The method of Claim 13, further comprising:

proposing frame selections for the first communication device at the second BTS; and forwarding the frame selections to the selector entity for monitoring thereby.

[c15] 15. The method of Claim 14, further comprising determining whether frame selections from the second BTS are within a predetermined correctness threshold.

[c16] 16. The method of Claim 15, further comprising causing the second BTS to assume frame selection for the first communication device when frame selections from the second BTS are within a predetermined correctness threshold.

[c17] 17. A computer program product, comprising:
means for dynamically establishing a selector base station (BTS) in a wireless telephony infrastructure, the infrastructure using IP;
means for establishing CDMA over-the-air communication between at least one base station in the infrastructure and a CDMA wireless communication device; and
means for handing off the selecting of frames of information from the communication device from the selector base station to a substitute base station upon reaching a threshold.

[c18] 18. The product of Claim 17, wherein the means for handing off causes the substitute base station to assume frame selection for the first communication device when frame selections from the substitute base station are within a predetermined correctness threshold.

[c19] 19 The product of Claim 18, further comprising means for receiving first communication device frames from the selector base station at a selector entity when a first threshold is reached.

[c20] 20. The product of Claim 19, further comprising:
means for monitoring frame selection by the selector base station for the first communication device at the selector entity.

[c21] 21. The product of Claim 20, further comprising:

means for assuming frame selection for the first communication device at the selector entity when a second threshold is reached.

- [c22] 22. The product of Claim 21, further comprising:
means for proposing frame selections for the first communication device at the substitute base station; and
means for forwarding the frame selections to the selector entity for monitoring thereby.

- [c23] 23. The product of Claim 22, further comprising means for determining whether frame selections from the substitute base station are within a predetermined correctness threshold.

- [c24] 24. A communication system, comprising:
at least two communication endpoints configured for CDMA communication with a wireless communication device;
the endpoints communicating with each other using IP;
at least a first one of the endpoints being dynamically selected as a selector endpoint; the selector endpoint undertaking a frame selection service for the wireless communication device; and
a selector entity transferring frame selection from the selector endpoint to a substitute endpoint in accordance with a handoff algorithm.

- [c25] 25. The system of Claim 24, wherein the handoff algorithm includes:
receiving first communication device frames from the selector endpoint at a selector entity when a first threshold is reached.

- [c26] 26. The system of Claim 25, wherein the algorithm further comprises:
monitoring frame selection by the selector endpoint for the first communication device at the selector entity.

- [c27] 27. The system of Claim 26, wherein the algorithm further comprises:

assuming frame selection for the first communication device at the selector entity when a second threshold is reached.

- [c28] 28. The system of Claim 27, wherein the algorithm further comprises:
proposing frame selections for the first communication device at the substitute endpoint; and
forwarding the frame selections to the selector entity for monitoring thereby.
- [c29] 29. The system of Claim 28, wherein the algorithm further comprises determining whether frame selections from the substitute endpoint are within a predetermined correctness threshold.
- [c30] 30. The system of Claim 29, wherein the algorithm further comprises causing the substitute endpoint to assume frame selection for the first communication device when frame selections from the substitute endpoint are within a predetermined correctness threshold.
- [c31] 31. A voice over Internet (VOIP) system, comprising:
plural access points communicating with plural wireless communication devices using a wireless communication device over-the-air protocol different from Internet protocol (IP), each wireless communication device transmitting frames of information, at least one access point undertaking frame selection, including the addition and subtraction of access point sectors to a call.
- [c32] 32. The system of Claim 31, wherein the wireless communication device protocol is a code division multiple access (CDMA) protocol, and each access point is a CDMA access point (CAP).
- [c33] 33. The system of Claim 31, wherein the access point is a base station (BTS).
- [c34] 34. The system of Claim 31, wherein the infrastructure does not include a base station controller (BSC) external to any access point and communicating therewith.

[c35] 35. The system of Claim 31, wherein the access point converts OTA protocol packets to IP packets.

[c36] 36. The system of Claim 31, wherein the access point converts IP packets to OTA protocol packets.

[c37] 37. The system of Claim 31, wherein the access point is a first access point, and the first access point directs at least a second access point in the infrastructure to forward, to the first access point, reverse-link frames received by the second access point from the wireless communication device.

[c38] 38. The system of Claim 31, wherein the access point is a first access point, and the first access point sends to at least a second access point in the infrastructure forward link frames to be sent by the second access point to the communication device.

[c39] 39. The system of Claim 31, wherein the access point is a first access point, and the first access point is dynamically established from among the plural access points.

[c40] 40. A method for frame selection in a wireless communication device infrastructure, comprising:

establishing communication between at least a first base station (BTS) and at least one wireless communication device using a non-Internet protocol (IP) over-the-air (OTA) protocol, the first base station being one of a plurality of base stations in an infrastructure, wherein no base station communicates with a base station controller (BSC) external to a base station;

selecting frames from the wireless communication device at the first base station (BTS).

[c41] 41. The method of Claim 40, wherein the selecting act includes dynamically establishing base station sectors during a call.

[c42] 42. The method of Claim 41, further comprising:

directing, at the first base station, at least a second base station to forward, to the first base station, reverse-link frames received by the second base station from the wireless communication device.

- [c43] 43. The method of Claim 41, further comprising:
sending, from the first base station to at least a second base station, reverse-link frames received by the first base station from the wireless communication device.
- [c44] 44. The method of Claim 40, further comprising dynamically determining a frame selector base station from among the plurality of base stations.
- [c45] 45. The method of Claim 40, wherein at least one base station converts OTA protocol packets to IP packets and IP packets to OTA protocol packets.
- [c46] 46. The method of Claim 40, comprising communicating within the infrastructure using IP.
- [c47] 47. The system of Claim 1, wherein the wireless communication device is assigned a first IP address corresponding to a first access point and a second IP address corresponding to a second access point.
- [c48] 48. The method of Claim 10, comprising assigning the wireless communication device a first IP address corresponding to the first base station and a second IP address corresponding to the second base station.
- [c49] 49. The product of Claim 17, further comprising:
means for assigning the communication device a first IP address corresponding to the selector base station and a second IP address corresponding to the substitute base station.
- [c50] 50. The system of Claim 24, wherein the wireless communication device is assigned a first IP address corresponding to the selector endpoint and a second IP address corresponding to the substitute endpoint.

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